

CLAIMS

What is claimed is:

1. A method for enzymatically amplifying a target nucleic acid or a fragment thereof, comprising

(a) providing a nucleic acid amplification reaction mixture having a water-based liquid phase and a gellan gel matrix phase, wherein the liquid phase comprises a target nucleic acid and is entrapped in the gel matrix phase; and

(b) subjecting the reaction mixture to conditions suitable for amplifying the target nucleic acid or a fragment thereof, whereby the target nucleic acid or the fragment thereof is amplified.

2. The method according to claim 1 wherein the gellan is intact.

3. The method according to claim 1 wherein the gellan is digested into small fragments.

4. The method according to claim 1 wherein the reaction mixture comprises at least 220 molecules of the target nucleic acid.

5. The method according to claim 1 wherein the reaction mixture comprises at least 2000 molecules of the target nucleic acid.

6. The method according to claim 1, wherein said gel matrix comprises less than 0.01% wt nucleic acid other than the target nucleic acid based on the weight of the gellan.

7. The method according to claim 1 wherein the target nucleic acid or a fragment thereof is amplified using a method selected from the group consisting of PCR, LCR, TAS, NASBA, 3SR, RACE, and one-sided PCR.

8. The method according to claim 1 further comprising isolating the target nucleic acid from cells grown on gellan-containing medium.

9. A method for enzymatically amplifying a target nucleic acid or a fragment thereof, comprising

- (a) providing a nucleic acid amplification reaction mixture that comprises a target nucleic acid, and gellan at a concentration above 0.005 wt%; and
- (b) subjecting the reaction mixture to conditions suitable for amplifying the target nucleic acid or a fragment thereof, whereby the target nucleic acid or the fragment thereof is amplified.

10. The method according to claim 9 wherein the amplification reaction mixture comprises gellan at a concentration above 0.01 wt% based on the weight of water.

11. The method according to claim 9 wherein the amplification reaction mixture comprises gellan at a concentration above 0.05 wt% based on the weight of water.

12. The method according to claim 9 wherein the amplification reaction mixture comprises gellan at a concentration above 0.1 wt% based on the weight of water.

13. The method according to claim 9 wherein the amplification reaction mixture comprises gellan at a concentration above 0.125 wt% based on the weight of water.

14. The method according to claim 9 wherein the amplification reaction mixture comprises gellan at a concentration above 0.15 wt% based on the weight of water.

15. In a method for enzymatically amplifying nucleic acid, the improvement comprising performing the enzymatic amplification in the presence of at least 0.005 wt% gellan or gellan fragments.

16. A composition suitable for use in nucleic acid amplification comprising water, gellan at a concentration above 0.005 wt% based on the weight of water, a DNA polymerase, dNTPs, and a target nucleic acid.